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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	GEN Docket No. 90-314
	)	ET Docket No. 92-100
	)	
Amendment of the Commission's Rules to Establish New Personal Communications Services	)	RM-7140, RM-7175, RM-7617, RM-7618, RM-7760, RM-7782, RM-7860, RM-7977, RM-7978, RM-7979, RM-7980
	)	
	)	PP-35 through PP-40, PP-79 through PP-85

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Comments of dbX Corporation

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SUMMARY

In today's highly mobile society, many businesses and individuals would benefit from access to a uniform mobile communications system that would extend beyond local markets and political boundaries to provide services that are nationwide, although not ubiquitous, in nature. In licensing PCS services, dbX Corporation ("dbX") urges the Commission to accommodate this important segment of the communications market by allocating PCS spectrum for "extended" PCS networks. Specifically, dbX proposes that the Commission allocate 30 MHz of PCS spectrum for open-entry licensing of fully compatible networks of strategically located, discrete base stations providing PCS at multiple points across the United States ("Extended Network PCS"). The use of spread spectrum technology and the requirement that applicants demonstrate that their proposals would not cause harmful interference to existing Extended Network PCS facilities or to facilities proposed in earlier-filed applications for Extended Network PCS would permit the licensing of a large number of Extended Network PCS licensees, each providing specialized, uniform services to various highly mobile users at many locations across the nation. To prevent restrictive and burdensome local and state zoning regulations from stalling the development of Extended Network PCS, dbX recommends that the Commission

preempt state and local zoning regulation of Extended Network PCS base stations.

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Comments of dbX Corporation

dbX Corporation ("dbX"), by its attorneys, hereby submits its comments on the Federal Communications Commission's (the "Commission's") Notice of Proposed Rule Making ("Notice") to establish a regulatory structure for the licensing of personal communications services ("PCS").[1/]

I. Introduction

dbX is a Florida corporation whose controlling principal is David A. Bayer, a telecommunications entrepreneur with more than twenty years' experience in the mobile communications industry and former owner and operator of the CyberTel mobile communications companies. As the Commission is aware, the CyberTel companies are licensees of the St. Louis, Missouri/Illinois MSA, various RSAs in

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1/ Amendment of the Commission's Rules to Establish New Personal Communications Services, 7 FCC Rcd 5676 (1992).

Missouri and Hawaii, a cellular system in the British Virgin Islands, and numerous common carrier paging facilities throughout Missouri, Illinois and Minnesota.

dbX believes that United States consumers and businesses must have access to the latest mobile communications services. During the past three years, the mobile communications industry has taken important first steps toward the early introduction of PCS services in the United States. A prompt Commission decision adopting a regulatory scheme that will bring PCS services to the public as expeditiously as possible will ensure that research and development firms, service providers, equipment manufacturers and financial institutions will continue to support and pursue the development of PCS. dbX strongly urges the Commission, therefore, to adopt a regulatory structure that will permit the rapid allocation and licensing of PCS.

II. The Commission's PCS Licensing Framework Should Include an Allocation for "Extended" PCS Networks to Serve Highly Mobile Users

In today's highly mobile society, many businesses and individuals would benefit from access to a uniform mobile communications system that would extend beyond local markets and political boundaries to provide services that are nationwide, although not ubiquitous, in nature. Any PCS

licensing framework that is limited solely to local or even regional geographic markets will restrict the establishment of fully compatible and economical networks for these highly mobile nationwide users. The failure to authorize some type of nationwide PCS system will yield precisely the same disadvantages to the nationwide PCS user that exist today in cellular and other terrestrial mobile communications services. In licensing PCS services, the Commission must accommodate this important segment of the communications market by allocating PCS spectrum for "extended" PCS networks. Specifically, dbX proposes that the Commission authorize, for open-entry licensing, fully compatible networks of strategically located, discrete base stations providing PCS at multiple points across the United States.[2/] This licensing scheme would encourage the development of many customized networks, each providing specialized, uniform services to various highly mobile users at many locations across the nation.

A. A Large Number of Licensees Could Use Spectrum Allocated for Extended Network PCS

dbX perceives Extended Network PCS to consist of integrated and compatible, strategically located and geographically discrete service areas that would provide PCS

2/ dbX will refer to this class of PCS service as "Extended Network PCS."

services at multiple points across the United States. Significantly, dbX's concept of Extended Network PCS does not contemplate the establishment of ubiquitous national coverage.

The spectrum allocated for Extended Network PCS operations could be assigned to multiple Extended Network PCS providers. As further described below, dbX suggests allocating 30 MHz of public access spectrum to accommodate Extended Network PCS. Because Extended Network PCS would consist of large numbers of geographically dispersed base stations providing service to small areas, the proposed 30 MHz of PCS spectrum would be available for assignment to a number of Extended Network PCS operators serving various locations across the country. As also described below, the use of spread spectrum technology would permit more than one provider to serve essentially the same area using the same portion of spectrum. Thus, including an Extended Network PCS authorization in the PCS licensing framework would provide a much needed service to highly mobile consumers and would promote the efficient use of scarce PCS spectrum.

B. Extended Network PCS Would Provide Important Communications Services to Highly Mobile Business and Individual Travelers

By reserving spectrum for such Extended Network PCS systems, the Commission would foster the development of

customized networks for highly mobile users that require a single source of specialized communications services available at discrete locations across the nation. The special communications needs of the United States trucking industry illustrate one potential application of Extended Network PCS.[3/] Chairman Sikes recently recognized the benefits that customized networks, such as one designed to meet the needs of the trucking industry, would provide to U.S. business:

> Many of these emerging services have the potential to produce substantial productivity gains. To cite another example, companies have proposed special communications networks designed to meet the specific needs of the surface transportation industry -- particularly the long-distance trucking business, for which conventional cellular, satellite, or other existing mobile offerings are not cost-effective. The American trucking industry -- for which there are currently few special communications or radio frequency allocations -- is a $300 billion a year enterprise, so even modest productivity improvements in this sector represent very large national gains.[4/]

3/ TRX Transportation Telephone Company, an affiliate of dbX, filed a Request for Pioneer's Preference in the Commission's licensing of PCS for its development of a nationwide communications network to serve the United States trucking industry.

4/ Statement of Alfred C. Sikes before the Subcommittee on Communications, Committee on Commerce, Science and Transportation, United States Senate, June 3, 1992.

C. The Potential of PCS Will Not Be Realized If It Is Limited to Local and Regional Systems

Reserving spectrum for Extended Network PCS would foster the development of operationally consistent systems that will be easier for highly mobile users to access and use. Single source availability also would avoid the added expense of having to obtain service from multiple local or regional providers, eliminate costly roamer charges and foster the development of specialized, uniform services across the nation. By authorizing Extended Network PCS providers, the Commission would also ensure the rapid deployment of geographically extensive mobile communications networks.

Conversely, confining all PCS providers to local or regional markets would prevent the establishment of a fully compatible, effective and economical network for highly mobile business and individual users requiring extended access to uniform services at discrete locations across the nation. Indeed, a licensing scheme restricted to, for example, local MSA and RSA markets, larger, regional areas, such as the 47 Major Trading Areas as defined by Rand McNally, or even a combination of local and regional markets would produce the same disadvantages for PCS users requiring nationwide service that exist today in cellular and other terrestrial mobile communications systems. These

disadvantages include the lack of an operationally consistent network; incompatibility of dissimilar infrastructure equipment used in contiguous or proximate markets; unnecessary, burdensome and costly commercial arrangements leading to multiple service subscriptions and high roamer charges which include excessive per minute and access charges and charges for each system utilized; and high transactional costs required to consolidate market areas, all of which have led to inefficiencies and delay in bringing affordable mobile services to the marketplace on a truly nationwide basis. This experience demonstrates that the full potential and competitiveness of PCS services will not be realized if the PCS licensing framework is limited to a patchwork of numerous local or regional markets.

D. Commission Precedent Supports Licensing Extended Network PCS

dbX's proposal for Extended Network PCS is amply supported by Commission precedent establishing other nationwide communications services. In authorizing these services, including several important land mobile services, the Commission has repeatedly recognized the clear public interest benefits of nationwide licensing. For example, in its recent proceeding that established rules for the use of the 220-222 MHz band by the Private Land Mobile Radio

Services, the Commission explained its rationale for devoting a portion of this spectrum to nationwide systems:

> Without a specific nationwide set-aside, however, establishment of nationwide systems in this band would be impractical or impossible. An applicant would have to obtain numerous individual authorizations and, possibly, use different frequencies throughout the nation. Development of these technologies as they are applied to nationwide systems will ultimately provide a broader base of radio technology support for the marketplace.[5/]

In addition, the Commission has acknowledged the advantages of nationwide set-asides in authorizing or proposing other communications systems, including nationwide Digital Termination Systems,[6/] nationwide paging systems,[7/] a nationwide automatic train control system,[8/] and nationwide SMR systems.[9/] The advantages of authorizing nationwide networks in these services are at least as relevant to the Commission's licensing of PCS systems. By creating Extended Network PCS, the Commission would foster the development of efficient and affordable personal communications networks for highly mobile business users and other travelers.

5/ Amendment of Part 90 of the Commission's Rules to Provide for the Use of the 220-222 MHz Band by the Private Land Mobile Radio Services, 6 FCC Rcd 2356, 2361 (1991).

6/ Digital Termination, 86 FCC 2d 360 (1981).

7/ Domestic Public Land Mobile, 93 FCC 2d 908 (1983).

8/ Advanced Train Control, 3 FCC Rcd 427 (1988).

9/ Specialized Mobile Radio, 4 FCC Rcd 8673 (1989).

The Commission already has recognized the importance of allowing PCS providers maximum flexibility to develop and deliver the most effective mobile communications services available, including systems that support nationwide uses. For example, in discussing the deployment of PCS services, Chairman Sikes has stated: "incumbents and new entrants should have maximum possible technical, operational and commercial freedom to provide tomorrow's [communications] services."[10/] In addition, the Commission formally indicated its intention in this regard when it adopted its PCS Policy Statement:

> The Commission intends to broadly define personal communications services and make available an adequate amount of spectrum to foster the development of innovative and competitive markets for these services. The spectrum allocation should facilitate local, regional, national and international uses . . . . We will encourage significant flexibility in the development of technologies and services.[11/]

Consistent with its authorization of nationwide systems in other mobile services, and its stated intention to allow PCS providers maximum flexibility to offer tomorrow's services, the Commission's PCS licensing framework must include a set-aside for Extended Network PCS to serve highly mobile

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10/ Remarks of Chairman Alfred C. Sikes before the Cellular Telecommunications Industry Association, February 11, 1992, New Orleans, Louisiana.

11/ Amendment of the Commission's Rules to Establish New Personal Communications Services, 6 FCC Rcd 6601, 6601 (1991) (emphasis added).

business and individual users that require specialized, uniform services across the nation.

III. The Commission Should Allocate 30 MHz of Spectrum for Extended Network PCS Providers

As explained above, because Extended Network PCS would consist of large numbers of geographically dispersed base stations providing service to many areas, PCS spectrum allocated to Extended Network PCS would be available for assignment to a large number of Extended Network PCS operators serving various locations across the country. The use of spread spectrum technology promises to permit more than one provider to serve essentially the same area using the same portion of spectrum. This combination of spatial and coded separations would permit the Commission to license a large number of Extended Network PCS providers.

For a number of reasons, 30 MHz of public access spectrum is the appropriate amount of spectrum to be allocated for Extended Network PCS. First, the allocation of 30 MHz of spectrum would enable the licensing of a large number of Extended Network PCS providers. Further, a 30 MHz allocation is necessary to permit licensees of Extended Network PCS to accommodate incumbent microwave users while developing a PCS customer base in the early years. Lastly, a 30 MHz allocation would permit the compatibility of fixed station and customer premises equipment for regional PCS and

Extended Network PCS licensees. Such compatibility would be critical to Extended Network PCS end users who would want to use their customer premises equipment in both environments and beneficial to all PCS end users who would profit from the accelerated availability of affordable PCS services. Such compatibility would permit longer production runs in the manufacturing of PCS equipment. The economies of scale created by longer production runs would reduce the cost of PCS equipment, enabling regional PCS and Extended Network PCS licensees to provide more affordable services.

Consistent with the Commission's proposed channelization scheme, dbX suggests that the spectrum allocated to Extended Network PCS should be from one of the following four frequency bands:[12/]

1850-1865; 1930-1945
1865-1880; 1945-1960
1880-1895; 1960-1975
1895-1910; 1975-1990

Although the Commission has proposed that the entire 1850-1990 MHz band be available for new services such as PCS,[13/] the Notice does not definitively address the allocation of

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12/ To the extent possible, dbX recommends that the Commission select from these four bands, for use by Extended Network PCS licensees, the band most harmonious with those used or proposed to be used in other countries, especially those in the western hemisphere, for similar services.

13/ Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies, 7 FCC Rcd 1542 (1992).

the 1875-1910 and the 1975-1990 MHz bands. Depending on the number of licensees and the amount of spectrum ultimately licensed, however, the Commission envisions that "the overall spectrum allocation to PCS would be adjusted accordingly."[14/]

IV. The Commission Should Designate a Standards Committee to Propose Technical Standards for Extended Network PCS Licensees

The Commission should designate a standards committee, such as the Institute of Electrical and Electronic Engineers, that, within one year of the grant of the first Extended Network PCS license and every seven years thereafter, would propose, for Commission ratification, technical standards for Extended Network PCS licensees. Licensees of Extended Network PCS would be required to conform their systems, within one year of the Commission's adoption of the recommendations, to the ratified technical specifications. Because licensees of Extended Network PCS will have a continuing duty to periodically upgrade their systems to incorporate technological advances proposed by the standards committee and ratified by the Commission, spectrum allocated to Extended Network PCS will be continuously utilized efficiently.

14/ Notice at 5691.

V. Licensing of Extended Network PCS

A. The Commission Should Adopt Eligibility Requirements

In order to ensure that Extended Network PCS is used to provide service that is inherently nationwide in character, dbX recommends that the Commission adopt certain eligibility requirements. First, applicants would be required to demonstrate that their proposals are designed to meet the needs of highly mobile users. Second, applicants would be required to propose to serve at least 200 transmitting stations situated in at least 30 states.[15/] In addition to the build-out requirements discussed below, a licensee that does not construct and place into operation at least 200 base stations in at least 30 states within the first 5 years would automatically forfeit its license. Finally, licensees of Extended Network PCS would be required to file annual reports certifying that at least 70% of the traffic on their systems, represented in minutes, is interexchange.[16/]

15/ These numbers may be inappropriate for certain Extended Network PCS applications. The coastal location of most ports and marinas, for example, may make it difficult for an applicant proposing to serve commercial shippers, passenger cruiselines, and commercial and recreational boaters to meet the 30-state requirement. In such situations, an applicant should be able to request waiver of such eligibility requirements.

16/ This figure would be a system-wide average.

Licensees who fall below the 70% threshold in more than two out of every three years would forfeit their licenses.

B. Applications for Extended Network PCS Should Be Granted on a First-Come, First-Served Basis

dbX proposes that the Commission announce in its final Report and Order in this proceeding or by separate public notice the date upon which it will begin accepting applications for Extended Network PCS. As it has done for cellular unserved area applications[17/] and as it proposes to do for Part 22 Public Mobile Services[18/], the Commission should adopt a licensing scheme whereby otherwise acceptable applications for Extended Network PCS would be granted on a first-come, first-served basis. Applications would be published in the Commission's public notices and would be subject to a 30 day period for filing petitions to deny.

dbX recommends that applicants be required to submit an engineering demonstration proving that their proposals would not cause harmful interference to existing Extended Network PCS facilities or to facilities proposed in earlier-filed applications for Extended Network PCS. This requirement,

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17/ Amendment of Part 22 of the Commission's Rules to Provide for the Filing and Processing of Applications for Unserved Areas in the Cellular Service and to Modify Other Cellular Rules, 6 FCC Rcd 6185 (1991).

18/ Revision of Part 22 of the Commission's Rules Governing the Public Mobile Services, 7 FCC Rcd 3658, 3659 (1992).

combined with the first-come, first-served treatment of applications,[19/] would ensure that no application would be denied because of spatial overlap with prior-filed applications. If multiple applications are filed on the same day and propose to use the same portion of spectrum to serve essentially the same geographic area, the Commission would grant all such applications with a condition that each applicant must coordinate its system so that it causes no harmful interference to any other such applicant. This process would mean that no two applications for Extended Network PCS would be mutually exclusive.

C. The Commission Should Adopt Certain Measures Designed to Discourage Speculation

Because the spatial and coded separations proposed by dbX would permit a large number of Extended Network PCS systems to be licensed, the incentive for making speculative filings is greatly reduced. Nonetheless, dbX suggests that the Commission adopt certain measures designed to discourage speculation.

19/ Because public notices would be published only periodically, it is possible that an applicant may not know that another application, which proposes to use the same portion of spectrum to serve essentially the same area, had been filed prior to its own. In this instance, an applicant should be permitted to amend its application to demonstrate that its proposal does not cause harmful interference to the facilities proposed in the earlier-filed application.

First, the Commission should require applications for Extended Network PCS to include financial information similar to that required by the Commission for Private Land Mobile Services applications in the 220-222 MHz band.[20/] Next, the Commission should require that applicants for Extended Network PCS submit engineering information sufficient to demonstrate the technical viability of their proposals. Further, dbX recommends that the Commission adopt construction benchmarks similar to those adopted in the 220-222 MHz licensing of Private Land Mobile Services.[21/] These benchmarks would require that licensees of Extended Network PCS construct and place into operation the following percentages of the transmitting stations proposed in their applications: 30% within 2 years, 60% within 3 years and 95% within 5 years.[22/] Finally, the Commission should adopt

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20/ See Amendment of Part 90 of the Commission's Rules to Provide for the Use of the 220-222 MHz Band by the Private Land Mobile Radio Services, 6 FCC Rcd 2356, 2363 (1991) (applicant must submit either proof of available assets sufficient to cover estimated construction and operating costs or a firm financial commitment from a lender for funds sufficient to cover these costs).

21/ See id. at 2366.

22/ Facilities at locations other than those specified in a licensee's original application may count towards these benchmarks. A licensee, however, would still be obligated to satisfy the 30-state minimum within the first five years.

strict transfer restrictions, prohibiting the transfer of an Extended Network PCS license for 5 years.[23/]

D. Ten Year License Terms and Strong Renewal Expectancies are Necessary to Encourage Investment

dbX concurs with the Commission's determination that PCS licensees should be awarded ten year licenses and strong renewal expectancies.[24/] The cost of constructing a PCS system, especially an Extended Network PCS system which must have a minimum of 200 transmitting stations, is likely to require expenditures that will not be recovered prior to expiration of the license term. Furthermore, licensees of both Extended Network PCS and regional PCS systems must be able to assure lenders and investors that their funds will not be placed in unreasonable jeopardy by regulatory processes. The Commission has acknowledged, in granting renewal expectancies for cellular licensees, that strong

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23/ Transfers that are pro forma or truly involuntary would be exempted from these prohibitions. A licensee that fails, within the first five years, to construct and place into operation at least 200 transmitting stations situated in at least 30 states would not be permitted to transfer its license, because such failure to construct would cause automatic forfeiture.

24/ Notice at 5707-08.

renewal expectancies are required to encourage investment in such circumstances.[25/]

VI. The Commission Should Preempt Certain State and Local Zoning Regulations

As it has done with satellite earth stations,[26/] the Commission should preempt certain state and local zoning regulation of Extended Network PCS base stations. The Commission has recognized that such federal preemption may be necessary to ensure that non-federal regulations do not frustrate the federal interest in promoting interstate communications.[27/] These concerns are at least as relevant to Extended Network PCS as they are to satellite earth stations.

Two factors ensure that licensees of Extended Network PCS will require access to a vast number of base stations: the very nature of PCS, which is likely to be based on the use of small radius cells, and the proposed requirement that such licensees construct at least 200 transmitting stations. An Extended Network PCS licensee would be subject,

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25/ Report and Order, Amendment of Part 22 of the Commission's Rules Relating to License Renewals in the Domestic Public Cellular Radio Telecommunications Service, 7 FCC Rcd 719, 720 (1992).

26/ Preemption of Local Zoning Regulations of Receive-Only Satellite Earth Stations, 51 Fed. Reg. 5519 (1986).

27/ See id. at 5522.

therefore, to the regulations of hundreds or thousands of state and local zoning authorities. If licensees of Extended Network PCS are required to comply with the regulations of this multitude of zoning authorities, service to the public will be severely delayed, and licensees likely will have extensive coverage voids.

The Commission should not allow restrictive and burdensome local and state zoning regulations to stall the development of Extended Network PCS. Because such regulations would frustrate the Commission's attempts to bring the substantial benefits of Extended Network PCS to American consumers and businesses, the Commission should preempt state and local zoning regulation of Extended Network PCS base stations.

dbX notes that these problems are not unique to Extended Network PCS; cellular licensees have had, and regional PCS licensees will have, similar difficulties. The experience of cellular licensees with zoning delays is well known,[28/] and research conducted by dbX indicates that these

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28/ The zoning environment is not likely to improve from that experienced by cellular licensees; in fact, it is likely to worsen. In regulating the zoning of cellular base stations, zoning authorities generally assumed that only 2 licensees would be seeking authority for base stations for such mobile telecommunications services. With the introduction of multiple PCS licensees, zoning authorities can be expected to become much more resistant to authorizing further base stations for mobile telecommunications services.

problems will be greatly exacerbated for regional PCS licensees who will typically need to construct 6 to 8 times the number of cells that cellular carriers initially needed to construct. For example, assuming a three mile radius for PCS base stations, a PCS licensee seeking to serve the same area in the St. Louis, Missouri/Illinois MSA that CyberTel initially served with 11 cellular base stations would require more than 80 PCS base stations. These locations would be subject to the jurisdiction of upwards of 50 zoning authorities. dbX further recommends, therefore, that the Commission preempt state and local zoning regulation of both cellular and PCS base stations.

VII. Conclusion

dbX urges the Commission to incorporate the foregoing proposals into the PCS regulatory structure. The adoption of these proposals is crucial to the rapid introduction of advanced PCS services to highly mobile members of the public.

Respectfully submitted,

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